

REMARKS

Applicants request favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

To place the application in better form, Applicants submit herewith a substitute specification, which includes a new title and a new abstract. For the Examiner's convenience, also provided is a marked-up copy of the original specification showing the portions thereof which are being changed. The substitute specification includes the same changes as are indicated in the marked-up copy. Applicants' undersigned attorney has reviewed the substitute specification and submits that the substitute specification contains no new matter.

Claims 1, 5-10, and 12-14 are presented for consideration. Claims 1, 5 and 10 are independent. Claims 2-4 and 11 have been canceled without prejudice or disclaimer. Claims 1, 10, 12 and 13 have been amended to clarify features of the subject invention, while claim 14 has been added to recite additional features of the subject invention. Support for these changes and this claim can be found in the original application, as filed. For example, the Examiner's attention is directed to the discussion in the original disclosure on page 9, lines 6-17, regarding the feature of irradiating light from a light source to a metal film having a fine opening whose size is not more than a wavelength of the light emitted from the light source, to page 13, line 15, to page 15, line 13, with respect to the length and width ratio of the rectangular fine opening, and to page 14, lines 16-20, for new claim 14. Accordingly, no new matter has been added.

Claims 5-9 have been withdrawn from consideration as being directed to a non-elected invention. Applicants have retained these claims in this application in order to preserve their

rights. Applicants request that the Examiner contact their undersigned representative should these claims need to be canceled in order to expedite allowance of this application.

Applicants also submit herewith replacement drawings sheets for FIGS. 4A-4D and FIGS. 5A-5D in which each of these figures has been individually labeled in accordance with preferred practice. Favorable consideration is requested.

Applicants requests favorable reconsideration and withdrawal of the objections and rejections set forth in the above-noted Office Action.

The Examiner objected to the specification due to various informalities. Applicants submit herewith a substitute specification which corrects the informalities noted by the Examiner, among others noted by Applicants. Accordingly, Applicants submit that this objection has been overcome. Such favorable indication is requested.

The Examiner also objected to the title. Applicants have amended the title along the lines suggested by the Examiner. Accordingly, Applicants submit that this objection has been overcome. Such favorable indication is requested.

Claims 1-4 and 10-13 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In claim 1, the Examiner asserted that the recitation of the forming of “a light spot” is unclear and has assumed that “a light spot” refers to “a **fine** light spot,” which was previously recited in this claim. With regard to claim 10, the Examiner asserted that the recitation of the rectangular fine opening and its position is repetitive and confusing. To expedite prosecution, Applicants have amended claims 1, 10, 12 and 13 and have canceled claims 2-4 and 11 in light of the Examiner’s comments. Applicants submit, therefore, that this rejection has been overcome. Such favorable indication is requested.

Turning now to the art rejections, claims 1-3, 10, 11 and 13 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,359,852 to Ueyanagi. Claims 4 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Ueyanagi patent in view of U.S. Patent Application Publication No. 2002/0154859 to Kuroda et al. Applicants submit that the cited art, whether taken individually or in combination, does not teach or suggest features of the present invention, as previously recited in these claims. Therefore, these rejections are respectfully traversed. Nevertheless, Applicants submit that independent claims 1 and 10, for example, as presented, amplify the distinctions between the present invention and the cited art.

In one aspect of the present invention, independent claim 1 recites a near-field light generating method for irradiating light from a light source to a metal film that has a fine opening having a size of not more than a wavelength of the light emitted from the light source, and forming a fine light spot adjacent to the fine opening on a light outgoing side of the fine opening. The method includes providing the metal film with a rectangular fine opening whose length to width ratio is between 1.1 times and 2 times that of a standard square opening, obtained by increasing one side of the standard square opening, and irradiating the metal film with light from the light source to form the fine light spot, which has a length and a width that are substantially equal to those of the standard square opening.

In another aspect of the present invention, independent claim 10 recites a near-field optical head including a light blocking film having of a metal film, and a rectangular fine opening formed in the metal film, the rectangular fine opening having a size not more than a wavelength of light emitted from a light source, the light from the light source irradiating the metal film to form a fine light spot. A length to width ratio of the rectangular fine opening is

between 1.1 times and 2 times that of a standard square opening, obtained by increasing one side of the standard square opening, and the fine light spot has a length and width that are substantially equal to those of the standard square opening.

Applicants' invention, as recited in independent claims 1 and 10, provides the ability of enhancing light intensity without increasing the size of the light spot itself. In more detail, by providing a rectangular fine opening whose length to width ratio is between 1.1 times and 2 times that of a standard square opening obtained by increasing one side of the standard square opening, as discussed in the subject specification on page 15, lines 8-13, it is possible to obtain a light intensity that is not less than two times that of the square opening. This can be considered to be feature 1 of Applicants' invention. Still further, in Applicants' present invention, as recited in independent claims 1 and 10, the metal film is irradiated with light from a light source to form a fine light spot having a length and a width that are substantially equal to those of the square opening (that is, a size of the light spot obtained through the rectangular fine opening is substantially equal to that of the square opening). This can be considered to be feature 2 of Applicants' present invention.

Applicants submit that the cited art does not teach or suggest such features of Applicants' present invention, as recited in independent claims 1 and 10.

The Examiner considers the Ueyanagi patent to teach an optical head and an optical disk apparatus in which the optical head includes a rectangular fine opening (slit) 7a in a shading film having a width and a length that are different from each other. Applicants submit, however, that the Ueyanagi patent fails to teach or suggest that light intensity can be enhanced without increasing the size of the light spot itself, an advantage provided by Applicants' present invention, as recited in independent claims 1 and 10.

Still further, Applicants disagree with the Examiner's reading of the Ueyanagi patent. Specifically, in that patent, the light spot 9a is focused on a light covering film upper surface 6b (see column 8, lines 22-40 of that patent) and has a diameter of about 0.2 μm (as discussed at column 14, lines 24 and 25). The Examiner takes the position that the Ueyanagi patent discusses that the length is greater than the width for generating a fine light spot 9a (of near-field light), on page 5, the last two lines of the Office Action, but, as is apparent from the discussion above, in the Ueyanagi patent the light spot 9a is a focused light spot of propagation light and is not a near-field light spot. Still further, the Ueyanagi patent, at column 8, lines 54-58, discusses that near-field light 9b has a length of about $D_{1/2}$ and a width W, with the width W being set to several fractions of or less than the diameter $D_{1/2}$ of the light spot 9a.

Applicants also disagree with the Examiner's characterization on page 6, line 3, of the Office Action, that, in the Ueyanagi patent, the fine light spot has substantially equal length and width. Further, with respect to the reference to the effect that $D_{1/2}$ is not changed even when L is changed and, thus, is determined by W (page 6, lines 7-12, of the Office Action), Applicants submit that $D_{1/2}$ is obtained by focusing the propagation light and, therefore, $D_{1/2}$ has no relation to W, which does not depend on L. Rather, the Ueyanagi patent teaches, at column 20, lines 13-18, a length W and a width L for near-field light. Applicants submit, however, that nowhere does the Ueyanagi patent teach or suggest at least feature 1 and feature 2 of Applicants' present invention, as recited in independent claims 1 and 10, which have been noted above.

For the foregoing reasons, Applicants submit that the Ueyanagi patent should not be read to anticipate or render obvious Applicants' present invention, as recited in independent claims 1 and 10.

Applicants further submit that the remaining art cited does not cure the deficiencies noted above with respect to the Ueyanagi patent.

The Examiner relies on the Kuroda et al. publication for teaching a near-field optical microscope apparatus with a near-field optical probe or head having an array of multiple x-apertures. Applicants submit, however, that the Kuroda et al. publication, as with the Ueyanagi patent, does not teach or suggest at least feature 1 and feature 2 of Applicants' present invention, as recited in independent claims 1 and 10. Applicants submit, therefore, that the Kuroda et al. publication adds nothing to the teachings of the Ueyanagi patent that would render obvious Applicants' present invention, as recited in independent claims 1 and 10.


For the foregoing reasons, Applicant submits that the present invention, as recited in independent claims 1 and 10, is patentably defined over the cited art, whether that art is taken individually or in combination.

Dependent claims 12-14 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in their respective independent claims. Further individual consideration of these dependent claims is requested.

Applicants submit that the instant application is in condition for allowance. Applicants request favorable reconsideration, withdrawal of the objections and rejections set forth in the above-noted Office Action and an early Notice of Allowance.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,



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